

a second valve located in a second opening adjacent the first opening into the mask, the second valve operative to prevent air flow through the second opening upon patient inhalation but which permits air flow through the second opening upon exhalation into the mask so as to permit a patient wearing the mask to exhale air through the second opening, wherein the second valve is integrally molded with the remainder of the mask. (N/E)

Please add the following claims:

15. In combination:

an aerosolization chamber for receiving an aerosol from a source of aerosol medication, said aerosolization chamber having an exit end with a first valve to prevent flow into said aerosolization chamber from said exit end; and

a mask having an inlet connected to the exit end of the aerosolization chamber, wherein said mask has minimal dead space inside yet provides efficient inhalation and exhalation flow paths that purge said mask of exhaled air;

and further wherein said mask provides a short exhalation flow path comprised of a second valve located in an opening adjacent said inlet and into said mask, said second valve adapted for positioning directly adjacent the nostrils of the nose, said second valve adapted

to permit air flow through said opening upon exhalation into said mask so as to permit a patient wearing said mask to exhale air through said opening, and

to prevent air flow through said opening upon patient inhalation;

and further wherein said first valve in said exit end of said aerosolization chamber permits flow from said aerosolization chamber into said mask, but not vice versa.

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28. The invention of Claim 16 wherein said mask is comprised of a first frustoconical portion of rather shallow taper and a second frustoconical portion of greater taper, said second frustoconical portion being downstream of said first portion.

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29. The invention of Claim 16 wherein said mask is comprised of:

a first frustoconical portion of shallow taper;
a second frustoconical portion of greater taper located downstream of said first frustoconical portion; and
a nosepiece extending from end to end of said second frustoconical portion, and wherein said second frustoconical portion opens radially into said nosepiece.

¹⁸
32. In combination:

an aerosolization chamber for receiving an aerosol from a source of aerosol medication said aerosolization chamber having an exit end;

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a mask having an upstream end connected to the exit end of the aerosolization chamber, wherein said mask is comprised of a first frustoconical portion of shallow taper and a second frustoconical portion of greater taper than said first frustoconical portion;

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a one-way valve near the exit end of the aerosolization chamber and located in a first opening into said mask, said one-way valve preventing backflow into the aerosolization chamber; and

a second valve located in a second opening adjacent said first opening into said mask, said second valve operative to prevent air flow through said second opening upon patient inhalation but which permits air flow through said second opening upon exhalation into said mask so as to permit a patient wearing said mask to exhale air through said second opening.

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33. The invention of Claim ¹⁸32 further comprising:

a nosepiece extending end to end of said second frustoconical portion.

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34. In combination:

an aerosolization chamber for receiving an aerosol from a source of aerosol medication, said aerosolization chamber having an exit end;

a mask having an upstream end connected to the exit end of the aerosolization chamber;

a ring at said upstream end of the mask;

a one-way valve near the exit end of the aerosolization chamber and located in a first opening into said mask, said one-way valve preventing backflow into the aerosolization chamber; and

a second valve located in a second opening adjacent said first opening into said mask, said second valve operative to prevent air flow through said second opening upon patient inhalation but which permits air flow through said second opening upon exhalation into said mask so as to permit a patient wearing said mask to exhale air through said second opening.

35.²¹ The invention of Claim ²⁰34 wherein said ring is approximately 1.4 inches.

36.²² The invention of Claim ²⁰34 wherein said second valve comprises a circular head.

37.²³ The invention of Claim ²⁰34 wherein said second valve is convex on an outer surface and concave on an inner surface.

38.²⁴ The invention of Claim ²⁰34 wherein said second valve includes a valve head having an undersurface which is flattened against a flat front of a wall at said upstream end.

39.²⁵ The invention of Claim ²⁰34 wherein said second valve is integrally molded with remainder of mask.

40.²⁴ The invention of Claim ²⁰34 wherein said second valve has a slit that bows out.

41.²⁷ The invention of Claim ²⁰34 wherein said mask is just over three inches in diameter across a rear thereof.

42.²⁸ The invention of Claim ²⁰34 wherein said mask is just over 2 inches from a rear open end to said ring.

43.²⁹ In combination:

an aerosolization chamber for receiving an aerosol from a source of aerosol medication, the aerosolization chamber having an exit end;

a mask having an upstream end connected to the exit end of the aerosolization chamber;

wherein the mask is comprised of:

a first frustoconical portion of a first taper;

a second frustoconical portion of a second taper located downstream of the first frustoconical portion, the second frustoconical portion comprises a majority of the mask, the second frustoconical portion adjacent the first frustoconical portion, the second frustoconical portion comprising a material that is stiffer than the material of the first frustoconical portion;

a nosepiece extending from the second frustoconical portion, and wherein the second frustoconical portion opens radially into the nosepiece;

a wall at the downstream end of the frustoconical portion;

a one-way valve near the exit end of the aerosolization chamber and located in an opening in the mask, the one-way valve preventing backflow into the aerosolization chamber, the one-way valve relative to an axis radially through the first frustoconical portion; and

a second valve located in an opening in the wall, the second valve operative to prevent air flow through the opening upon patient inhalation but which permits air flow through the opening upon exhalation into the mask so as to permit a patient wearing the mask to exhale air through the opening, the second valve having a valve flap, the valve flap comprised of the material of the second frustoconical portion.

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44. In combination:

an aerosolization chamber for receiving an aerosol from a source of aerosol medication, the aerosolization chamber having an exit end;

a mask having an upstream end connected to the exit end of the aerosolization chamber;

wherein the mask is comprised of: